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TECHNICAL NOTE

CONTROL OF MOUND ANTS IN PLANTATIONS

Scenario A ring of trees in a plantation of conifers begins to turn yellow. The ring widens and more trees on its perimeter turn yellow and die. In the center of the ring is an ant hill and around it, in the space of two years, sixteen 10-year-old trees planted at 2-m spacing are dead.

Probably the plantation is on an old field and, likely, there is more than one ant hill and more dead and dying trees. Ants are a chronic problem in plantations, exacting a limited, but steady toll of trees. At a particular risk are the pines, spruces, and balsam fir.

Control

Finding the ant hill is the first problem, simple enough in areas about to be planted, but difficult in established plantations. The cost of extensive and regular surveillance on large plantations may make preventative treatment uneconomical. The practical approach is to look for trees already damaged. The first, easily spotted symptoms are yellowed foliage and, on closer examination, a cankered bark area at ground level. Often, small blisterlike swellings are evident just above the cankered bark area. The ant mound is most likely within 6 metres of the damaged tree.

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INSECTS AND DISEASES ■

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Table 1

APPLICATION RATES FOR PESTICIDES REGISTERED FOR MOUND ANTS

Pesticide	Mixture		Coverage (square meters)
	Product	Water	
Diazinon 500 EC (Apply at 50-100 L of spray pre 100 square meters.)	15 mL	10 L	100
Diazol 50 EC	75-150 mL	50-100 L	100
Dursban 2E (Mix enough water to cover 100 square meters.)	45 mL	no fixed amount	100
Lindane 25 WP	60 mL	140 L	10
Lindane 20 EC	125 mL	150 L	100
Sevin 5%D (Apply as a dust preferably before a rain - if practical hose in with water.)	2-2.5 (kg)	nil	100
Sevin WLR (Do not water for 2 days after application, or apply before expected rain.)	210-290	150-200	100

Note:

The average treatment area per ant mount would not likely exceed 1 square meter.

The pesticides and application rates listed are those which are presently registered for ant control. Always refer to labels for currently acceptable uses.

Treat individual mounds as soon as they are discovered by applying a registered insecticide any time between late April and October. The following products (Pest Control Product numbers in brackets) are registered for control of mound ants: Diazinon 500 EC (11530), Diazol 50 EC (15921), Dursban 2E (10636), Lindane 25 WP (4429), Lindane 20 EC (9332), Sevin 5% D (11599), Sevin XLR (17027). The insecticide should be mixed into the top 5-8 cm of the mound or, if practical, after leveling the mound with a rake. (Raking may be not only impractical when large plantations are treated, but also uncomfortable for the unwary, since it disturbs the ants and increases their viciousness and urge to bite.) The amount of pesticides required depends on the height of the mound, which reflects the probable size of the ant population within. Specific application instructions for the products listed above (given on the labels) are shown in Table 1. Application just before a heavy rain improves chances of success (except for Sevin XLR).

Damage

Aside from girdling trees, ants may inject formic acid into the tissues of the main stem, thus preventing downward movement of food in the inner bark. Also, their underground activities loosen the soil particles around roots causing the root hairs to dry out, killing the roots and often the tree.

Ants are at the upper end of the evolutionary chain of insects. This particular species is believed to selectively kill only those trees that shade their mounds, even large trees up to 15 meters distant. Presumably the ants reach the "offending tree" by following its shadow.

Ant colonies consist of three casts: queen, males, and workers. They feed mostly on sugary products (honeydew) excreted by foliar and root aphids, and scale insects. In return for food they provide, the ants do not prey on these insects, but tend and protect them from their natural predators. They kill other insects and consume the body fluids. Though trees are killed, tree tissues and sap are not used for food. Winged adults emerge from their nests in the spring and summer and mate in swarms, after which the males die almost immediately. The females find new sites for colonies, then bite off their wings, lay eggs, and care for their offspring.

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